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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/815,192  
Filing Date: March 31, 2004  
Appellant(s): PEISE ET AL.

\_\_\_\_\_  
Alfred W. Froebrich  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 7/7/09 appealing from the Office action mailed 10/7/08.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,464,592	Booker et al.	11-1995
4,188,915	Kummel et al.	2-1980

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claims 1-7 are rejected under 35 U.S.C. 251 as being broadened in a reissue application filed outside the two year statutory period.**

The terms “entrained-flow gasification” and “fluidized bed” are not equivalents, meaning, the term “entrained-flow gasification” encompasses subject matter that is not encompassed by “fluidized bed”. A claim is broader in scope than the original claims if it contains within its scope any conceivable product or process which would not have infringed the original patent. A claim is broadened if it is broader in any one respect even though it may be narrower in other respects.

In the instant case, as declared by Dr. Manfred Schingnitz in the declaration filed 4/15/08 (see specifically paragraphs 5 and 6 on page 2), an entrained flow reactor encompasses subject matter that is not encompassed by a fluidized bed reactor. In other words, declaration explicitly discloses that an entrained flow gasification reactor is understood by one skilled in the art to be different (ie encompasses different subject matter).

**Claims 1- 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Booker et al. (US 5,464,592) in view of Kummel et al. (US 4,188,915).**

Regarding claims 1 and 2, Booker discloses an entrained-flow gasification reactor (10, see abstract) for gasification of carbon containing material (carbonaceous fuel, see abstract), the reactor comprising:

an entrained-flow gasification reaction chamber (combustion chamber, 13);

a refractory-grade lining (12 and 22, col. 2 lines 12-16) configured to form a first, upper part of said reaction chamber (see Fig. 1); and

a cooling wall (throat section, 31) configured to form a second, lower part of said reaction chamber (see Fig. 1), said second part of said reaction chamber including a lower floor (see short horizontal portion of cooling wall/floor in Fig. 2), and a lower outlet opening (21), said cooling wall including cooling coils (pipes, 32) connected in a gas-tight manner (welded together using webbing (39), col. 3 lines 24-28), said cooling coils being coated with a heat-conducting refractory layer (see coating on pipes (32) in Fig. 2, col. 3 lines 29-39) and operated, while being cooled by pressurized water (see abstract), and said refractory-grade lining extending downward in a direction parallel to sidewalls (walls 11 and 19 are parallels with refractory grade lining 12 and 22, see Figs. 1 and 2) of said reactor chamber (see Figs. 1 and 2) over said cooling wall (the refractory lining 22 is generally located over/above the cooling wall, see Fig. 2) in an area of said second part of said reaction chamber including an area of said lower floor (see Fig. 2 which illustrates the refractory lining extending parallel to the sidewall 19 of the chamber which is located in the area of the cooling wall lower floor), such that said refractory-grade lining (22) and said cooling wall (31) are joined in an overlapping fashion (see Fig. 2 where the refractory lining 22 overlaps the cooling wall, 31).

While Booker discloses a refractory grade lining that is placed on the cooling wall (throat) in order to protect the cooling walls from thermal shock and erosion (col. 1 lines 54-61), Booker fails to explicitly disclose that the refractory material consists of ceramic.

Kummel also discloses a gasification reactor that is equipped with a cooling wall (1) lined with tubes (37).

Kummel teaches a ceramic refractory layer coated on the tubes (see abstract) as a preferable way of protecting the cooling tubes from damage due to thermal shock (col. 4 lines 53-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the ceramic refractory layer of Kummel on the cooling wall of Booker as a preferable material to use in order to protect the cooling tubes of Booker from thermal shock.

Furthermore, regarding limitations recited in claims 1 and 2 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP §2114 and 2115. Further, process limitations do not have a patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.

Regarding claim 3, Booker, as discussed in claim 1 above, further discloses the cooling wall comprises a double mantle design (see Fig. 2 where the cooling wall comprises an inclined floor mantle (adjacent to refractory (22)) and a vertical mantle leading out of the gasification reactor).

Regarding claim 4, Booker, as discussed in claim 1 above, further discloses the second part of the reaction chamber (cooling wall) includes a lower floor (see Fig. 2) and a lower outlet opening (see gas flow direction in Fig. 1).

Regarding claim 5, Booker, as discussed in claim 4 above, further discloses and illustrates that said cooling wall is limited to said lower outlet opening (see Figs. 1 and 2).

Regarding claim 6, Booker, as discussed in claim 4 above, further discloses a cylindrical mantle (shell, 11) surrounding said reaction chamber (see Fig. 1), and cooling means to cool said lower floor and lower outlet opening of said reaction chamber (see Fig. 1), said cooling means being connected in parallel with said cylindrical mantle (see flow direction in Fig. 1).

Regarding claim 7, Booker, as discussed in claim 1 above, further discloses said first part and said second part of said reaction chamber are the upper part and lower, part respectively of said reaction chamber (see Fig. 1).

#### **(10) Response to Argument**

##### Rejection under 35 U.S.C. §251

On pages 4 and 5, Appellant argues that the declaration by Dr. Manfred Schingnitz was filed (4/15/08) to show the differences between an entrained flow reactor and a fluidized bed reactor and that one of ordinary skill, by looking at the instant specification, would recognize that the originally claimed "fluidized bed" reactor was actually an "entrained flow" reactor.

Appellant cites *Forest v. Ivox* (should be *Forest v. Ivax*) to support the argument. However, the examiner points out that one of ordinary skill would not immediately realize that the originally claimed "fluidized bed" is contradictory to the specification which contains a down entrained

flow reactor. While the examiner recognizes Appellants arguments regarding how the terms “entrained flow reactor” and “fluidized bed” are interpreted by one skilled in the art, the examiner contends that these are not the ONLY definitions that would be implied by these terms. It is the examiner’s position that one skilled in the art would recognize that a fluidized bed reactor CAN be interpreted as an entrained flow reactor (flow through the fluidized bed inherently entrains particles in a suspension), but an entrained flow reactor CANNOT be interpreted as a fluidized bed (as there is no ‘bed’ in an entrained flow reactor).

As such, the proposed amendment does indeed broaden the scope of the invention (entrained flow reactor contains subject matter not contained by fluidized bed reactor) and such an amendment would not have been apparent to one of ordinary skill in the art, as a fluidized bed CAN be interpreted as an entrained flow reactor.

#### Rejections under 35 U.S.C. §103(a)

On pages 7 and 8, Appellant argues that Booker fails to disclose a refractory grade lining that extends over the cooling wall in a direction parallel to the sidewalls of said reactor chamber and goes on to (on page 8) to describe how Booker fails to teach this limitation. The examiner respectfully disagrees with this argument. Booker teaches a refractory grade lining (12 and 22) which are parallel to the sidewall (11 and 19, see Figs. 1 and 2). The examiner notes that although Booker discloses section 19 as a ‘floor’, Booker discloses that it is a continuation of the shell 11 and configured in a conical shape (col. 2 lines 25-32). Seeing that the shape of 19 is in the shape of a conical shell, the examiner finds it suitable to classify the section 19 as a part of



the sidewall. As such, the refractory lining (12 and 22) is parallel to the sidewalls (11 and 19, see Figs. 1 and 2).

Furthermore, Booker teaches that the refractory lining 22 is 'over' the cooling wall in an overlapping fashion. See Fig. 2 which shows the refractory lining 22 generally over the cooling wall 31 and in an overlapping fashion (see a section of cooling wall 31 is 'tucked' underneath the refractory lining 22).

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Matthew J Merkling/

Examiner, Art Unit 1795

Conferees:

/Jennifer K. Michener/

Supervisory Patent Examiner, Art Unit 1795

/Christine Tierney/

Supervisory Patent Examiner, Art Unit 1700